

appropriate smoothing should come from an analysis of the data as a consequence of trying to forecast the output price change. An averaging procedure should be adopted only if it can be shown to give optimal and statistically valid predictions of the PCI adjustment factor.

GTE shares the same concerns as BellSouth (at 16) and Lincoln (at 7-8) regarding a direct measure, *i.e.*, if a sufficiently long period of time is not used to predict a PCI adjustment factor, the incentive nature of price caps would be destroyed and there would be pricing instability in the marketplace. Even Norsworthy (Appendix B at 32) recognizes that a "period longer than three years is needed to smooth out short-term effects as to the performance of the LECs." Indeed, Norsworthy (*id.*) recommends a nine-year period for measuring the LECs' X-Factor. GTE believes that nine years may not be enough data points to accurately forecast a PCI adjustment factor and recommends that, at a minimum, all available data should be included in an ongoing forecasting or moving average process.

B. The Commission should adopt a direct measure and eliminate the possibility of gaming by all parties.

One of GTE's major concerns with a differential price cap formula is that, unless all indexes are calculated in the same manner, the formula will not be economically meaningful and will open the door to gaming of the process.³¹ As GTE (at 14-15) notes in its comments and Sprint (at 9) also points out, use of a differential formula that incorporates an input price differential (W-Factor) could introduce instability in two ways. First, the differential formula requires the use of two additional variables, the $\% \Delta P_{US}$ and $\% \Delta TFP_{US}$. These are measured by using GDPPI and the BLS TFP series, respectively. Any inconsistency between these national measures and LEC industry measures will introduce error and

³¹ See GTE's Comments (Appendix C) on the gaming possibilities.

instability into the PCI estimate. Second, any difference in the way these variables are introduced into the formula will also create error and instability. For example, if a fixed value is chosen for the input price differential, while a five-year moving average is used for TFP, then the differential formula will no longer correspond to the direct measure. It is this mixing of methodologies and time periods that leads GTE to conclude that a direct measure employing the same methodology for both input prices and TFP and for the same period of time is optimal.

GTE's major concern is that the PCI adjustment factor will be a piecemeal forecast of the components of the formula. For example, if the GDPPI is not averaged, the X-Factor is subject to a five-year moving average, and the W-factor is subject to a seven- or ten-year moving average, then the formula loses all economic validity and the gaming has already begun.

In fact, proponents of an X-Factor containing a positive fixed W-Factor are gaming the formula. Those same parties that argue vehemently that an input price differential exists in the short term also recognize that the fluctuations in the LEC input price series will produce a differential that is higher than the US input price series sometimes and lower at others. Yet these parties want to include only a positive fixed differential. All the data put on the record demonstrates that in the long run the differential between the LEC input price series and the US input price series is zero. Logic dictates that if random or short-term fluctuations exist, then they must be positive at some point and negative at others. Those parties advocating a fixed positive input price differential ignore those periods when LECs input prices exceed US input prices. This is a solution loaded to produce a "win-win" outcome for interexchange carriers, and a "lose-lose" outcome for exchange carriers. If the

Commission refuses to accept that a reasonable estimate of the future mean input price differential is zero, *then logic and fairness dictate that it allow the formula to reflect any potential short-term fluctuations — both positive and negative.*

Concerns about the possibility of gaming the averaging process lead GTE to endorse the simplest method, which is an ARIMA (*i.e.*, Autoregressive Integrated Moving Average) process forecasting method.³² This method eliminates GTE's concerns about the ability to game the averaging process, and provides the Commission with the ability to estimate the next-year-ahead PCI adjustment factor based on past history.³³

C. Adoption of a direct measure of LEC input prices and LEC TFP eliminates the lag associated with US economy-wide data.

As ETI (at 67) states: "while the theory of competitive market behavior holds that productivity gains are eventually flowed through to consumers, it provides little direct guidance as to precisely how quickly this will occur." ETI claims that a five-year moving average with a two-year lag would not mirror the behavior of competitive, technology-impacted markets. GTE submits that adoption of a forecasted PCI adjustment factor based on a direct measure eliminates any lag associated with US economy-wide data in the price cap formula and ensures that benefits flow through to consumers more rapidly. As GTE (at 26) observes in its comments, competitive markets act as though they optimally forecast

³² See GTE's Comments (at 28-31 and Appendix D) for an explanation of an ARIMA process forecasting method.

³³ GTE's recommendation of a forecasting method was predicated on having sufficient data. It would seem now it is unreasonable to expect data prior to 1984. As a compromise, GTE would support a moving average until sufficient data exist to begin a time series forecast — that time to be determined based on the recommendation of such qualified experts as Dr. Christensen.

prices. Specifically, the market uses the available information to predict the likely output and input prices. Since inputs are purchased in competitive markets, all the information on a going-forward basis is contained in the prices and past prices. This is because the price summarizes all the impacts from all the different forces that affect markets. Therefore, GTE contends that to emulate the working of a competitive market, the PCI adjustment factor should be a forward-looking estimate, based on the past history of the growth of LEC-specific input prices and TFP.

In summary: The best method of determining the next-year PCI adjustment factor is a time series forecasting method. Because of the unavailability of sufficient data to forecast the next-year PCI adjustment factor, GTE recommends that the Commission adopt a moving average until enough data becomes available to use a forecasting method. The Commission must ensure that the price cap formula is not a piecemeal forecast of the components, *i.e.*, the annual PCI adjustment factor should not be based on individual components using different time periods; it should be calculated, and then a forecast or moving average performed on the annual factor. Adoption of a direct measure of the percent change in LEC input prices and the percent change in exchange carrier TFP eliminates not only the lag associated with a formula incorporating economy-wide measures but removes the ability of all parties to game the formula.

IV. INTERSTATE TFP CANNOT BE MEASURED IN AN ECONOMICALLY MEANINGFUL MANNER.

The Commission (*Fourth Notice* at ¶63) found that:

[I]nterstate and intrastate services are largely provided over common facilities, and ... the record contained no evidence that there was an economically meaningful way to divide and measure the facilities used for the provision of interstate service from facilities used for the provision of intrastate services.

Whether or not a TFP can be developed for a subset of jointly produced outputs depends solely on the structure of cost and production. Specifically, for a valid separation of TFP into a part due to interstate and a part due to intrastate, the cost function must be additively separable in the two sets of outputs. A synonymous term is that the outputs must exhibit input non-jointness.³⁴ While this is a hypothesis that is straight-forward to test statistically, it is unnecessary to do so since a necessary condition for non-jointness is that there be no common costs or shared facilities. Such jointness is long recognized by Congress as well as the Commission. In this vein, GTE reminds everyone that delivery of an interstate call requires a local loop.

Further, the Commission (*Fourth Notice at* ¶63) recognizes that relinquishing the use of Part 36-separated costs and demand "would represent a further step toward price cap regulation and away from rate-of-return regulation." The LECs wholeheartedly endorse these findings of the Commission.

Norsworthy (Appendix A at 23-29) and ETI (at 46-50) go to great lengths to develop the rationale for separating interstate TFP, and attempt to buttress their arguments with faulty manipulation of the TFP data.³⁵ ETI (at 48) relies on the fact that as long as Part 36

³⁴ See Chambers, R.G., *Applied Production Analysis*, Cambridge University Press: New York, 1988, at 286 and 293. See also Hall, R.E., *The Specification of Technology with Several Kinds of Output*, *Journal of Political Economy* 81, 1973, at 878-892.

³⁵ GTE points out that Norsworthy's claim in this proceeding is in direct contradiction to the claim made in his own book. See Norsworthy, J. R. and S. L. Jang, *Empirical Measurement and Analysis of Productivity and Technological Change: Applications in High Technology and Service Industries*, North Holland, 1992, at 225 -226, where he asserts that even using a set of caps on baskets of services rather than using a single cap on all services is totally misguided and "likely to produce far more contention and litigation than equity."

Rules are in effect, the Commission is required to jurisdictionally separate inter- and intrastate while recognizing (at 47) that Part 36 "bears little relationship to the manner in which costs are incurred." GTE urges the Commission to put aside the notion of an interstate calculation that is based on arbitrary jurisdictional separations having no relationship to economic reality — as recognized by Norsworthy and ETI.

Further, ETI (at 50), in calculating an interstate TFP number, assumes incorrectly that interstate input equals total company input, but interstate output must be estimated using interstate jurisdictional revenue. Norsworthy (at 28-29) calculates an interstate TFP using the same assumption as ETI that interstate inputs equal total company inputs; and then attempts to validate the "conservativeness" of this assumption by using jurisdictional separations in an attempt to reallocate costs to calculate an interstate TFP.

In both cases the analyses start with a false assumption. It is incorrect to assume that total company inputs equal interstate inputs. Unless the production function can be economically separated into pieces capable of independently producing interstate inputs and outputs, there is no economically valid method for measuring interstate TFP. Without a separate interstate loop, production cannot be so separated, and the claims of ETI and Norsworthy are without merit.

Norsworthy (Appendix A at 30) refers to the arguments of ETI's Dr. Selwyn in state proceedings for the separation of interstate and intrastate TFP. GTE believes this issue was settled by the *ex parte* placed on the record by USTA in this proceeding on March 13, 1995, which lists excerpts from state proceedings where Dr. Selwyn was a witness. These excerpts clearly show that Dr. Selwyn, in state proceedings, has in no way argued for a separation of the production function for intrastate only at the state level. If he were to do

so using the same rationale put forth in this proceeding, then he would have been arguing for much lower productivity factors at the state level.³⁶

Ad Hoc (at 6-7) resurfaces³⁷ its argument that *Smith v. Illinois Bell Telephone Co.*, 282 U.S. 133 (1930), requires the Commission to use jurisdictional separations to determine an interstate TFP. Per Ad Hoc (at 6): "TFP rates serve virtually the same function as the measurement of costs and revenues served in *Smith*." This issue has previously been rebutted by GTE and others.³⁸ *Smith* does not prohibit the Commission from using the best available data to determine a productivity factor — total company TFP. There is no jurisdictional question involved when selecting the best analytical approach to determine TFP. Initial PCIs were based on rates resulting from jurisdictional separations. The method used to calculate a TFP for use in determining the movement in the PCIs is not a jurisdictional issue. If it were a jurisdictional issue, then use of *GDPPI* and *TFP_{US}* — economy not interstate measures — would also be prohibited.

In summary: The Commission has correctly concluded that there is no economically meaningful way to divide and measure the facilities used for the provision of interstate

³⁶ Ad Hoc previously took exception to GTE's pointing out that the position taken in this proceeding by ETI, Ad Hoc's consultant, is inconsistent with those positions taken by ETI in intrastate proceedings. (See Ad Hoc's Reply to Oppositions, dated July 12, 1995, at 8-9.) When Ad Hoc attaches a consultant's opinion as a basis for its recommendations, then Ad Hoc must be prepared to have that consultant's position in other proceedings examined in relationship to this proceeding.

³⁷ See D.94-1, Petition for Partial Reconsideration of the Ad Hoc Telecommunications Users Committee, dated May 19, 1995, at 12-13.

³⁸ See D.94-1, GTE's Comments in Opposition to Petitions for Reconsideration, dated June 29, 1995, at 9-10. See also NYNEX's Opposition to Petitions for Reconsideration and Comments of USTA on Petitions for Reconsideration, dated June 29, 1995.

services from intrastate services. Having reached this conclusion, the Commission should reject attempts to employ arbitrary and uneconomical separation of the LECs' facilities in order to derive an interstate TFP. Advocates of this methodology admittedly cannot separate the inputs; they struggle to rationalize the separation of outputs. Contrary to parties' contentions that the Commission is exceeding its authority, the Commission's task is to select the most appropriate method of determining an economical measure of TFP. The PCIs were initialized based on rates established under jurisdictional separations. The selection of a method to adjust the PCIs is not a jurisdictional issue.

V. THE COMMISSION SHOULD REJECT ARGUMENTS FOR THE CONTINUED INCLUSION OF A CONSUMER PRODUCTIVITY DIVIDEND.

The Commission added a 0.5 percent CPD to the productivity factor "to assure that the *first* benefits of price caps flow to customers in the form of reduced rates."³⁹ As GTE (at 36) points out, the industry is no longer in the *first* stage of price caps, hence this rationale has disappeared, and so should the CPD. In addition, the cumulative 2.5 percent that is embedded in the price cap indexes will continue to pass through gains to consumers.

AT&T (at 35) maintains that a CPD is still required because data from pre-price cap periods is included in the TFP study. Adoption of a methodology that forecasts the next year, as recommended by GTE, or, in the alternative, a methodology that includes only years under price cap regulation, eliminates the need to adjust for any perceived historical gains. The PCI adjustment factor, if properly constructed, *will* represent achievable gains under price cap regulation, and no adjustment is needed for past history.

³⁹ LEC Price Cap Order, 5 FCC Rcd at 6799. (*Emphasis added.*)

The stated purpose of the productivity factor is to estimate achievable productivity gains.⁴⁰ Norsworthy (Appendix B at 29-30) claims that a "stretch" factor is attainable because of "technological advances and learning efficiencies." Contrary to Norsworthy's claim, there is no proof on the record that the LECs can continuously exceed historical productivity gains by 0.5 percent. Even Norsworthy presents no evidence that technological advances or learning efficiencies will be greater in the next five years than they have been in the last five or even ten years. In addition, all efficiencies, technological or learning, will be reflected in a properly developed TFP measurement.

ETI (at 63) states:

There is a direct interaction between the CPD and the sharing mechanism. The CPD is a sort of "advance payment" on the sharing obligation that is to be distributed to ratepayers irrespective of realized earnings levels, as compensation for ratepayer acceptance of incentive regulation.

The Commission adopted price cap regulation because it was in the public interest. ETI's suggestion that ratepayers (in this case interexchange carriers) should be compensated through a CPD for accepting what is in their best interest is absurd. The interexchange carriers are benefiting from price caps in the form of reduced access rates. The entire population benefits from incentive regulation because it results in the LECs operating more efficiently and increased infrastructure deployment. Further, the general population would benefit even more if LEC price decreases were flowed through in the form of lower rates to *all* long distance users. Contrary to the claims of the interexchange carriers that LEC price decreases are being flowed through to consumers, basic rate schedules are increasing, not decreasing. The Commission must see through the

⁴⁰ *National Rural Telecom Ass'n v. FCC*, 988 F.2d 174, 183 (D.C. Cir. 1993).

interexchange carriers' claims for what they are — the demand of these carriers to be allowed to increase their earnings while restricting the LECs' ability to remain viable.

In addition, the Commission has recognized that sharing has no place in pure price caps.⁴¹ GTE will discuss sharing *infra*, but for now it is sufficient to say that ETI's claim (at 64) that the CPD is an "alternative to sharing" should be dismissed summarily. Because in a competitive market there would be no CPD except for that implicitly revealed in the PCI through the workings of the market, GTE denies the justification for the CPD in the original price cap formula. For whatever reason, the Commission insisted on one. It is now time to remove it.

In summary: Parties that assume that a CPD should be an integral part of the price cap formula present no evidence whatsoever that this so-called "stretch" factor is attainable by the LECs or would be a natural component of a PCI that emulated the workings of a competitive market. Further, they ignore the point of this entire proceeding — to establish a productivity factor that accurately reflects the productivity gains that would accrue were the market competitive. The record in this proceeding is replete with appropriate price indexes and productivity data to compute a PCI compatible with a properly functioning competitive market. That is all that is needed; it is time for the Commission to eliminate the CPD.

VI. THE PRICE CAP FORMULA MIMICS COMPETITION, AND AS SUCH DOES NOT REQUIRE THE RETENTION OF SHARING.

The Commission is faced with a dilemma. Recognizing that "the sharing mechanism blunts the efficiency incentives created by the price cap formula,"⁴² the Commission seeks to

⁴¹ *Fourth Notice* at ¶114.

⁴² *Id.*

eliminate sharing in the LECs' price cap plan while still ensuring that certain LECs do not "overearn." If the Commission is truly seeking to emulate a competitive marketplace through the price cap formula, then it should concentrate on prices — not earnings — which is what a competitive market controls.

Some parties opposing the elimination of sharing dwell on LEC earnings as a reason for maintaining the sharing mechanism. GSA (at 7-8) believes that sharing is necessary to "prevent the LECs from achieving supra-competitive profits." MCI (at 20) wants the sharing mechanism retained to ensure that LECs do not retain "supranormal earnings." As GTE illustrated previously, the LECs' earnings are in no way "supranormal"; in fact, they are in line with earnings of comparable firms.⁴³

The LECs' accounting rates of return that MCI, GSA, and Ad Hoc (at 8) use as a reason for the retention of sharing are extremely distorted. Accounting rates of return are based on accounting rather than economic depreciation, book values rather than market values, and accrued revenues and expenses rather than cash flows.⁴⁴ Before the Commission can properly compare the LECs' rates of return to competitive firms, it must have an economic — not accounting — rate of return. According to Vander Weide, the LECs' economic return on investment for the 1991-94 time period was 8.94 percent — well below other firms arguing in this proceeding for the retention of sharing.⁴⁵

⁴³ See D.94-1, GTE's Reply Comments, dated June 29, 1994, at 5.

⁴⁴ See USTA's Reply Comments, Attachment C in the instant proceeding. ("Vander Weide")

⁴⁵ See, for example, MCI at 20, AT&T at 37-39.

ICA (at 2), in a classic misunderstanding of the purpose of the price cap formula, wants reported LEC earnings retained as a check on the performance of the plan. ICA correctly states that "[e]arnings and other financial information are everyday measurement tools in competitive markets, whereas productivity and X-factors are not." What ICA does not recognize is that the Commission uses productivity factors and X-Factors to replicate the functioning of a competitive market. That is, these measurements are used via the price cap formula to produce the same results that earnings and financial information do in a competitive market.

ETI (at 60) claims that sharing is "an 'automatic stabilizer' to protect ratepayers of LEC monopoly services against pricing excesses that may be attributable to misspecification of the price cap index formula." Norsworthy (Appendix B at 36) states that sharing should be retained because of "the currently unresolved state of measurement of TFP and the X-Factor." These are curious statements indeed from parties that have submitted what they claim are valid TFP studies.

Sharing was instituted by the Commission as a backstop mechanism for errors in its initial estimate of LEC productivity.⁴⁶ But, one of the main reasons for the instant proceeding is to clarify and refine the specification of LEC productivity and the X-Factor. The record in this proceeding should provide ample evidence to substantiate the selection of a productivity factor that accurately predicts the LECs' productivity. The Commission will have LEC pre- and post-price cap productivity data available for analysis plus extensive

⁴⁶ See *First Report and Order* at ¶191.

documentation on productivity calculation methodologies. Therefore, an "automatic stabilizer" or backstop mechanism is no longer needed.

Further, it is time to eliminate the sharing mechanism in order to allow the LEC price cap plan to truly emulate a competitive market. Commissioner Chong correctly states that sharing is "a vestige of cost-of-service regulation" which is not contained in "pure price regulation."⁴⁷ As the LECs have repeatedly observed, the Commission did not include sharing in AT&T's price cap plan or in the cable industry's price cap plan. Apparently, those parties that still advocate the retention of sharing have no desire to let the LECs operate as if they were in a competitive environment — which is exactly what a "pure" price cap plan is meant to do.

GTE submits that, in setting the PCI adjustment factor equal to the industry average of LEC input price growth less LEC productivity growth without a sharing requirement, the Commission will establish a factor that will prompt all LECs to improve their efficiency. Those exchange carriers that are performing above industry average will maintain an incentive to increase efficiency given that the benefits associated with increased efficiency can be retained. LECs at or below average will continue to strive to increase their efficiency. The overall result will be increased efficiency for the entire industry. The elimination of sharing is the only incentive that will produce the highest efficiency gains possible — which, in turn, will be reflected in the industry-average TFP. Thus, the LECs' ongoing efficiency gains will be passed through to consumers.

⁴⁷ See Separate Statement of Commissioner Rachelle B. Chong, *Re: The Prescription of Revised Percentages of Depreciation pursuant to the Communications Act of 1934, as amended, for Alascom et. al - Memorandum Opinion and Order*, dated January 26, 1996.

In summary: Sharing needs to be eliminated. The Commission recognizes that it blunts the efficiency incentives of price caps. Those parties that want sharing retained dwell on the earnings of the LECs, but their claims that the LECs' earnings are excessive are misplaced. Unadjusted LEC earnings are in line with firms deemed to be "competitive" and operating in the same industry. If the LECs' earnings are recalculated in the same manner as these "competitive" firms calculate their earnings, the LECs are significantly below not only these firms, but the rate of return sharing thresholds. If the Commission wants to truly incent the LECs to become as efficient as possible, then it must eliminate sharing.

VII. THERE IS NEAR-UNANIMITY AMONG COMMENTERS THAT THE COMMISSION SHOULD NOT ADOPT A MORE STRINGENT EXOGENOUS COST TEST THAN THAT ESTABLISHED IN THE *FIRST REPORT AND ORDER*.

Except for MCI (at 25), all parties commenting on the treatment of exogenous costs agree that the *First Report and Order* (10 FCC Rcd at 9090-9091) established sufficiently stringent rules for exogenous costs. In the *First Report and Order*, the Commission established a third prong to its exogenous cost test, requiring LECs to show that "their cash flows have changed due to the accounting cost changes." Further, exogenous cost treatment must be addressed in a rulemaking proceeding or through a request for a waiver of the rules or a declaratory ruling. (*Id.* at 9099.)

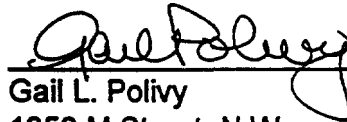
The Commission has made the exogenous test very strict; it should not further limit the ability of price cap LECs to seek such treatment. Until price cap LECs are allowed to operate in a fully competitive market where administrative, legislative, or judicial actions do not uniquely affect them, they should be allowed to seek exogenous treatment for costs incurred as a result of these actions whenever these costs are not accounted for in the PCI adjustment factor.

In summary: The Commission's rules for exogenous cost treatment should not be made still more severe. Exchange carriers should be allowed to seek exogenous treatment for costs incurred as a result of administrative, legislative, or judicial actions whenever these costs are not accounted for in the PCI adjustment factor.

Respectfully submitted,

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March 1, 1996

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Certificate of Service

I, Ann D. Berkowitz, hereby certify that copies of the foregoing "GTE's Reply Comments" have been mailed by first class United States mail, postage prepaid, on March 1, 1996 to all parties of record.


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